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ABSTRACT

The Industrial Education (IE) Program in the Teachers College at the University of Nebraska-Lincoln (UNL) is reversing the national trend of a shortage of qualified industrial technology education (ITE) graduates. The program's growth, 386 percent in 3 years, has been accomplished by using an established technical training environment--Nebraska's community colleges. The IE Program has established articulation agreements with three of Nebraska's six community colleges whose students can transfer to UNL after completion of an associate degree in ITE. Issues in exploring a possible community college articulation agreement are as follows: a 2+2 academic transfer agreement congruent with the community college's mission; an easy fit of the transfer program into the community college's delivery system; support of the community college faculty and administration; and meeting the university's entrance requirements. UNL has used three approaches when designing the associate degree offering: using an existing associate degree; modifying an existing associate degree program; and developing a new program. The associate degree transfer agreements established by UNL with the community colleges entail a 50/50 mix of general studies and technical coursework, plus educational psychology. The technical hours should be selected to parallel those a university student would complete to allow the transfer student to enter as a junior. (Appendixes include the UNL program of study and articulation agreements.) (YLB)

A New Source For

Industrial Technology Education

Teachers

An Articulation Blueprint
Presented At
The American Vocational Association Conference
December 13, 1997
Las Vegas, Nevada

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by
Dr. George E. Rogers

Assistant Professor and Program Head
Industrial Education
The University of Nebraska-Lincoln

Introduction

It is clear that the nation is currently having "the most critical shortage ever" of industrial technology education teachers (Todd, 1996, p. 14). Over the last two decades, industrial technology teacher education programs across the nation have indicated a significant reduction in the number of teachers they have been preparing (Volk, 1993). From 1975 to 1997 the number of industrial technology education graduates nationwide has gone form 6,371 to 640 (Bell, 1997; Volk, 1993).

Institutions that once produced a multitude of industrial arts teachers have shut their doors. Since 1980 over 37% of these colleges and universities have closed their industrial technology teacher education programs. Moreover, many of the current teacher preparation programs are on the brink of closing.

To add to this dramatic decline in the number of industrial technology education teachers being prepared, Weston (1997) noted that by the year 2001 the nation will need 13,089 new industrial technology education teachers. Where will these individuals come from? Who will prepare these educators? The nation's industrial technology teacher educators must address this critical shortage or bid farewell to the profession.

Background

One reason for this national trend is the expense of operating an industrial technology teacher education training facility (Rogers,

1996b). The funding required to maintain one modern industrial technology laboratory is more that some college of education budgets, and industrial technology education majors need skill preparation in numerous technical areas. Because of the technical diversity needed by the faculty, it is also difficult for universities to attract and maintain qualified industrial teacher educators.

The Industrial Education Program in the Teachers College at the University of Nebraska-Lincoln (UNL) is reversing this national trend. The program's growth, 386% in three years, has not being accomplished by expanding University industrial technology laboratories nor by hiring additional teacher educators. UNL's Industrial Education Program is utilizing an established technical training environment available across the state, Nebraska's community colleges.

The Industrial Education Program at UNL has established articulation agreements with three of Nebraska's six community colleges, Metropolitan Community College (Omaha and Elkhorn), Southeast Community College (Lincoln), and Central Community College (Grand Island and Hastings). Students from these three schools can transfer to UNL after completion of an associate degree in industrial technology education. Currently, 37% of UNL's 81 industrial technology education majors have some community college transfer credits in their programs.

With the shortage of qualified industrial technology education graduates reaching a critical level, industrial teacher educators need

to explore innovative methods of preparing these teachers. According to a survey of the 120 colleges and universities that prepare industrial technology education teachers, only two other universities use any type of link with the community college (Rogers, 1996b). However, neither of these institutions has a contractual transfer agreement with the community colleges they utilize.

By developing formal articulation agreements with the nation's community colleges, industrial teacher educators can prepare an adequate number of industrial technology education teachers, thus insuring the survival of this essential vocational program in the nation's secondary schools.

Implementation

Community colleges are generally very receptive when a four-year university approaches the institution to establish an articulation agreement. Most community colleges are surprised that "university" personnel are approaching the community college because of their "expertise."

In exploring a possible community college articulation agreement, numerous items must be examined. First, the 2+2 academic transfer agreement must be congruent with the community college's mission. Some community colleges have missions that are strictly technical or occupational preparation, an articulation with a university would not be appropriate. Second, does the transfer program easily fit into to community college's delivery system. Some

community college degree programs are very specific and would not allow for the flexibility required for this type of transfer. The articulation agreement must also have the support of the community college faculty involved and the school's administration.

From the university's perspective, the agreement must allow the student to meet the university's entrance requirements. The community college courses must also be equivalent to university course offerings, both in quality and in credit awarded.

The UNL undergraduate Industrial Technology Education program of study (see Appendix A) is based on national research of curriculum content (Rogers, 1996a). The program consists of 46 credit hours of general education coursework, 45 credit hours of industrial technology courses, and 41 credit hours of pedagogy. This program of study serves as the foundation for the articulation agreement.

Articulation Models

The University of Nebraska-Lincoln has utilized three approaches when designing the associate degree offering. An existing associate degree can be used, such as the transfer established with Central Community College and its Associate of Art in Education degree (see Appendix B). Typically, community colleges have associate degrees in education or general college transfer already in place. Adapting these established programs of study into

an industrial technology education program proves much easier and involves less administrative procedures.

Another method is to modify an existing associate degree program. The University of Nebraska-Lincoln and Southeast Community College used this approach. The degree's general education courses were already noted in the community college's academic transfer degree. Industrial technology courses, which could be individually taken, were added for technical content (see Appendix C).

A new community college degree program is another method of establishing the 2+2 transfer agreement. This approach was used in the agreement between Metropolitan Community College and UNL (see Appendix D). This type of degree program is built from the ground up by both institutions and must pass any type of state governing board. However, this type of agreement is the most visible because is appears in the community college catalog as a free-standing degree option.

Degree Content

The associate degree transfer agreements established by UNL with Central, Southeast, and Metropolitan Community Colleges entail approximately 30 credit hours of general studies, 30 credit hours of technical coursework, and three credit hours of basic educational psychology. This 50/50 mix, plus educational psychology, has proved to be agreeable to both the university and the community

colleges. Additionally, the students have experienced success on the university campus. The technical hours should be selected to parallel the technical hours a university student would complete and also allow the community college transfer student to move into university coursework at the junior level. The general studies coursework should be checked to insure their transferability to the university's general studies curriculum.

Conclusion

If industrial technology teacher educators do not take the leadership in securing innovative means of preparing industrial technology education teachers, the field faces possible extinction. Without this vocational program providing secondary students with skills to articulate with post-secondary technical education, the underlying philosophy of skill-enhanced Tech Prep will be lost.

References

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Volk, K. S. (1993). Enrollment trends in industrial arts/ technology teacher education from 1970-1990. Journal of Technology Education, 4(2), 46-59.

Weston, S. (1997). Teacher shortage: Supply and demand, The Technology Teacher, 57(1) 6-9.

Appendix A

University of Nebraska-Lincoln
Industrial Technology Education
Program of Study

NAME: _____ SS#: _____ BULLETIN _____

Dates completed: Technology Requirement _____ PPST _____ TEP _____ In TEP _____

INDUSTRIAL TECHNOLOGY EDUCATION 7-12

I. GENERAL EDUCATION (45-67 hrs)

UNL Essential Studies (ES) requirements will be fulfilled by completing Teachers College General Education requirements. Limit of 6 hrs. from one dept. in Areas B-J. One course each in U.S. History, philosophy (not logic), and literature are required.

A. Communications: Written (6 hrs)
(ES) _____ (3 hrs) _____
_____ (3 hrs) _____

B. Mathematics & Statistics (5-6 hrs)
(ES) _____ (3-5 hrs) _____
_____ (0-3 hrs) _____

C. Human Behavior, Culture, & Social Organizations (9 hrs)
(ES) _____ (3 hrs) _____
(ES) _____ (3 hrs) _____
** _____ (3 hrs) _____

D. Science & Technology (9-12 hrs) (lab required)
(ES) _____ (3-4 hrs) _____
VAED 201 _____ (3 hrs) _____
VAED 246 _____ (3hrs) _____

E. Historical Studies (3 hrs)
(ES) _____ (3 hrs) _____

F. Humanities (9 hrs)
(ES) _____ (3 hrs) _____
_____ (3 hrs) _____
** _____ (3 hrs) _____

G. Arts (3 hrs)
(ES) _____ (3 hrs) _____

H. Ethnicity & Gender (3 hrs)
(**may also count toward non-ES in Area C,F, or I)
(ES) _____ (3 hrs) _____

I. Speech (3 hrs)
**COMM _____ (3 hrs) _____

J. Physical & Mental Health (3 hrs)
HLTH 100 _____ (3 hrs) _____

K. Foreign Language (0-10 hrs)
_____ (0-10 hrs) _____

UNL Integrative Studies (IS) courses may be used to fulfill requirements in all other categories. Limit 9 hrs. from one dept. Based on this evaluation, you have _____ transfer hours accepted toward your degree. You must complete _____ Integrative Studies courses at UN-L.

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. VAED246__(200-Level)
4. _____ 9. CURR330__(300-Level)
5. _____ 10. VAED434__(400-Level)

II. PRE-PROFESSIONAL EDUCATION (14 hrs)

EDUC 131 or CURR 331 Found of Ed _____ (3 hrs) _____
EDPS 251 Adol Dev for Ed _____ (3 hrs) _____
EDPS 297 Practicum _____ (1 hr) _____
Must be taken concurrently
VAED 210 Intro to Industrial Techology_(F) (1 hr) _____
CURR 330 Multicultural Ed _____ (3 hrs) _____
EDPS 362 Learning in Classrm _____ (3 hrs) _____
Prerequisite: EDPS 251

III. ENDORSEMENT (45 hrs)

CONSTRUCTION
VAED 104 Wood Technology _____(F) (3 hrs) _____
VAED 242 Const Technology ____(Presession) (3 hrs) _____
VAED 243 Prod Proc of Wood Ind _____(S) (3 hrs) _____
DRAFTING
VAED 101 Mech Drafting _____(F) (3 hrs) _____
VAED 102 Arch Drafting _____(S) (3 hrs) _____
VAED 103 CAD Drafting _____(S) (3 hrs) _____
MANUFACTURING
VAED 109 Ind Metals and Plastics _____(S) (3 hrs) _____
VAED 202 Welding Technology _____(F) (3 hrs) _____
VAED 204 Machine Tool Technology _(F & S) (3 hrs) _____
Prerequisite: VAED 109
VAED 246 Modern Industries _____(F & S) (3 hrs) _____
POWER-ENERGY-TRANSPORTATION
VAED 201 Electricity/Electronics _____(F) (3 hrs) _____
VAED 203 Automotive Technology_____(F) (3 hrs) _____
ELECTIVES
VAED Electives by advisement _____) (3 hrs) _____
VAED Electives by advisement _____) (3 hrs) _____
VAED Electives by advisement _____) (3 hrs) _____

Acceptance into the Industrial Technology Teacher Education Program is required before enrollment in the Professional Education courses.

IV. PROFESSIONAL EDUCATION (25-27 hrs)

Teaching Methods
VAED 424 Dev of Voc Educ _____(F) (3 hrs) _____
VAED 318 Compre Voc Curr Devel _____(S) (3 hrs) _____
(Pre-requisite for VAED 321E)
VAED 434 *Spec Voc Needs _____(F) (3 hrs) _____
(*MEETS MAINSTREAM REQUIREMENT)
VAED 440 Lab Planning & Mgmt _____(F) (3 hrs) _____
VAED 321E Mthds of Tching Ind Educ_____(F) (3 hrs) _____
VAED 297 Practicum _____(F) (1 hrs) _____
Student Teaching
VAED 497M Stu Teach in Ind Ed _____ (8-10 hrs) P/N
VAED 497Y Mainstream Experience _____ (1 hr) P/N
VAED 497Z Multicultural Experience _____ (1 hr) P/N

Vocational approval (occupational experience) is required. See advisor.

or Signature: _____ Date: _____

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Rev 5/96

Appendix B

Central Community College

Articulation Agreement

LETTER OF AGREEMENT
FOR THE
TRANSFER OF ACADEMIC CREDIT
FROM
CENTRAL COMMUNITY COLLEGE
TO THE
UNIVERSITY OF NEBRASKA-LINCOLN

Central Community College and the Teachers College of the University of Nebraska-Lincoln believe that cooperative programs benefit both students and the respective institution. Therefore, the Teachers College of the University of Nebraska-Lincoln agrees that if a student satisfactory completes an Associate of Art in Education Degree from Central Community College, as outlined in the attached planning guide, he/she will be admitted to the University of Nebraska-Lincoln to pursue a Bachelor of Science Degree in Education with a Major in Industrial Technology Education.

Upon completion of the Associate of Art in Education Degree from Central Community College, the student will have met Teachers College requirements for:

30 semester hours in general education courses
30 semester hours in industrial technology education courses
4 semester hours in professional education courses

Students must complete all post-associate coursework at the University of Nebraska-Lincoln in accordance with the academic Standards of Progress defined in the University of Nebraska-Lincoln catalog. Specific courses may have prerequisites. Students are advised to meet with an advisor at the University of Nebraska-Lincoln to complete an individual program assessment.

If it is deemed necessary, after an evaluation of this transfer agreement, either institution may withdraw from this cooperative venture without penalty by notifying the other institution in writing. The date of withdrawal becomes effective after all currently enrolled students have completed their program of study.

James O'Hanlon, Ed.D
Dean of Teachers College
University of Nebraska-Lincoln

Date: Nov. 16, 1994

Dennis A. Tyson, Ph.D.
College Vice President
for Educational Services
Central Community College

Date: December 4, 1994

CENTRAL COMMUNITY COLLEGE
ASSOCIATE OF ART IN EDUCATION
(Industrial Technology Education)

Required & Elective Courses: 34 Hours

Education Courses (4 hours)

CCC	UNL	
Edu 111: Introduction to Education	Educ 131: Found. of Education	3
Edu 150: Pre-Student Teaching	Ed Psy 297: Practicum Exp.	1

Industrial Technology Courses (Select 30 hours from the following)

CCC	UNL	
AuT 125: Introduction to Automotive	VAE 203: Automotive	4
AuT 130: Basic Engine	VAE 203: Small Engines	2
CsT 130: Carpentry Tools & Machines	VAE 104: Basic Woodworking	3
CsT 136: Building Layout	VAE 242: Construction	2
Drf 141: Basic Drafting I	VAE 101: Mechanical Drafting	4
Drf 160: Basic Architectural Drafting	VAE 101: Architectural Drafting	4
Drf 256: Basic CAD Operations	VAE 101: CAD	2
Elc 124: Electrical Theory	VAE 201: Electronics I	3
Elc 126: Concepts of Electronics	VAE 201: Electronics II	3
OR *		
Eln 137: Concepts of Electronics I	VAE 201: Electronics I	3
Eln 138: Concepts of Electronics II	VAE 201: Electronics II	3
Mfg 150: Maintenance, Tools & Mach.	VAE 204: Machine Shop	4
Mfg 205: Introduction to CIM	VAE 246: Modern Industries	3
Mfg 211: Manufacturing Processes	VAE 109: Metals & Plastics	3
Wld 130: Oxyacetylene Welding	VAE 202: OA Welding	3
Wld 140: Shield Metal Arc Welding	VAE 202: ARC Welding	3
OR *		
Mfg 140: Oxy-Acetylene Welding	VAE 202: OA Welding	3
Mfg 142: Gas Metal Arc Welding	VAE 202: ARC Welding	3

* Students can select either set of electronics courses or welding courses, however students should not choose one course from each set.

General Education Courses: 30 Hours

CCC	UNL	
I. Communications (6 hours)		
Com 121: Written Com. I	Eng 150: Composition I	3
Com 122: Written Com. II	Eng 151: Composition II	3
II. Humanities, Social & behavioral Sciences (12 hours)		
B. Literature		
Fpa 237: Contemporary Literature	Literature	3
C. History		
Soc 231: US History I	His 201: Am. History, pre 1877	3
Soc 232: US History II	His 202: Am. History, post 1877	3
F. Psychology		
Psy 121: Gen. Psychology	Psych 181: Gen. Psychology	3
III. Mathematics & Science (12 hours)		
Mth 137: College Algebra	Math 101: College Algebra	3
Bio 141: Gen. Biology	Bio S/L 101: Gen. Biology	4
Phy 161: El. of Physics I	Phys 141: El. Gen. Physics	5

TOTAL HOURS REQUIRED = 64

Appendix C

Southeast Community College

Articulation Agreement

LETTER OF AGREEMENT
FOR THE
TRANSFER OF CREDIT
FROM
SOUTHEAST COMMUNITY COLLEGE
TO THE
UNIVERSITY OF NEBRASKA-LINCOLN

Southeast Community College and the Teachers College of the University of Nebraska-Lincoln believe that cooperative programs benefit both students and the respective institution. Therefore, the Teachers College of the University of Nebraska-Lincoln will recognize the credits that have been earned in the Associate of Arts (academic transfer) degree from Southeast Community College in the manner described once the student is admitted to the University of Nebraska-Lincoln. These transfer credits will apply toward a Bachelor of Science in Education degree with a major in Industrial Technology Education.

Upon completion of the Associate of Arts degree from Southeast Community College, the student will have met Teachers College requirements for:

45-46 semester hours in General Education
19-20 semester hours in Industrial Technology Education

Students must complete all post-associate coursework at the University of Nebraska-Lincoln in accordance with the "Academic Standards of Progress" defined in the University of Nebraska-Lincoln Catalog. Students are advised to meet with an advisor at the University of Nebraska-Lincoln to complete an individual program assessment.

If it is deemed necessary, after an evaluation of this transfer agreement, either institution may withdraw from this cooperative venture without penalty by notifying the other institution in writing. The date of withdrawal becomes effective after all currently enrolled students have completed their program of study.

James O'Hanlon, Ed.D.
Dean, Teachers College
University of Nebraska-Lincoln

Date: 1-21-97

Jack Huck, Ph.D.
Chancellor
Southeast Community College

Date: 2/17/97

UNL Industrial Technology Education
Planning Guide For
Southeast Community College
Associate of Arts Degree

SCC		UNL	
A. ENGLISH			
ENG 108 Composition I	4.5	ENG 150 Composition I	3
ENG 109 Composition II	4.5	ENG 151 Composition II	3
B. SPEECH			
SPH 209 Public Speaking	4.5	COMM 209 Pubic Spkg	3
C. MATH			
MAT 101 College Algebra	4.5	MATH 101 Col Algebra	3
or			
MAT 203 Contemporary Math	4.5	MATH	3
D. NATURAL SCIENCE			
CHE 109 Gen Chemistry I	6.0	CHEM 109 Gen Chem	3
or			
CHE 105 Chem & Citizen	6.0	Chemistry	4
E. HUMANITIES			
ENG 205 Modern Fiction	4.5	ENG 205 Modern Fiction	3
PHI 101 Intro Philosophy	4.5	PHIL 101 Intro Phil	3
SPN 101 Spanish I	7.5	SPAN 101 Spanish	3
SPN 102 Spanish II	7.5	SPAN 102 Spanish	3
F. SOCIAL SCIENCE			
HIS 201/2 Am History I or II	4.5	HIS 201/2 Am History	3
PLS 120 Am Government	4.5	POLS 100 Am Gov't	3
PSY 170 Intro Psychology	4.5	PSYC 181 Intro Psych	3
SOC 153 Intro Sociology	4.5	SOC 101 Intro Sociology	3
G. COMPUTER ELECTIVE			
MIC 101 MicroC Concepts	2.0		
MIC 118 Power Point	2.0		

H. INDUSTRIAL TECHNOLOGY EDUCATION

HMS 359 Dev Thru Life Span	4.5	EDPS 251 Ed Psych	3
DRT 112 Blueprint Rdg	3.0	VAED 101 Mech. Drafting	2
DRT 175 AutoCAD Basic	5.0	VAED 103 CAD Drafting	3

Plus two (2) of the three (3) following areas:

Machine Tool

MTT 112 Manf Process	3.0	VAED 204 Mach TI Tech	3
MTT 114 Engine Lathe I	3.0	VAED Elective	3
MTT 116 Milling Mach I	3.0		

Small Engine

MSE 110 Orientation	1.0	VAED 203 Auto Tech	3
MSE 111 Shop Technology	2.5	VAED Elective	2
MSE 112 Small Engines	5.0		

Welding

WEL 100 Orientation	0.5	VAED 202 Welding Tech	3
WEL 110 SMA Welding Equip	2.0	VAED Elective	3
WEL 115 Equip & Tools	1.5		
WEL 117 Equip OA	2.0		
WEL 142 Brazing & Soldering	1.0		
WEL 272 Sp Welding App	2.0		

Appendix D

Metropolitan Community College

Articulation Agreement

METROPOLITAN COMMUNITY COLLEGE

AND

UNIVERSITY OF NEBRASKA-LINCOLN

COOPERATIVE PROGRAM

IN

Bachelor of Science in Education with a Major in Industrial Education

Metropolitan Community College and the University of Nebraska-Lincoln believe that cooperative programs benefit the students in the metropolitan area and for this reason have entered into the following Cooperative Industrial Technology Education Program providing for articulation between the Associate in Applied Science Degree in Industrial Technology Education and the Bachelor of Science in Education with a Major in Industrial Education, jointly developed and entered into this date November 12, 1991. This program is designed to allow transfer of credits both for general education and for significant aspects of this major.

The cooperative Industrial Technology Education Program listed on the attached appendices will be reviewed on an ongoing basis from the date it is signed by the official representative of each institution. The agreement will be evaluated by both institutions for determination of continuation with any changes which may be deemed necessary by both institutions.

The University of Nebraska-Lincoln agrees that if a student satisfactorily completes an Associate in Applied Science Degree in Industrial Technology Education and meets the current admission requirements of the University of Nebraska-Lincoln, he/she will be admitted to the University of Nebraska-Lincoln to pursue a Bachelor of Science Degree in Education with a Major in Industrial Education.

This program is intended primarily to prepare individuals for industrial arts teaching in the junior high and in the non-vocational industrial arts areas of the senior high and is designed to service the Omaha metropolitan area.

The University of Nebraska-Lincoln supports the attached sequence of courses and will award a student the Bachelor of Science in Education with a Major in Industrial Education when the degree requirements have been met.

Upon completion of a Metropolitan Community College Associate in Applied Science Degree in Industrial Technology Education, students will have met the requirements for:

__28__ semester credit hours at Metropolitan Community College in the general education core.

__37__ semester credit hours in the Industrial Technology Education major.

Students must complete all post-associate coursework at the University of Nebraska-Lincoln in accordance with the academic Standards of Progress defined in the University of Nebraska-Lincoln catalog. Specific courses may have prerequisites. Students are advised to meet with an advisor at the University of Nebraska-Lincoln to complete individual program assessment.

While the Cooperative Program does preclude Metropolitan Community College students who have not completed the Associate in Applied Science Degree in Industrial Technology Education from transferring to the University of Nebraska-Lincoln Bachelor of Science in Education with a Major in Industrial Education Degree Program, it does not preclude students who pursue studies or a degree in the same program area or other programs at Metropolitan Community College from being admitted to the University of Nebraska-Lincoln under the regular admission policies of the University of Nebraska-Lincoln, nor does this agreement preclude students who graduate from Metropolitan Community College in an associate of applied science area from pursuing other degrees at the University of Nebraska-Lincoln.

If it is deemed necessary, after an evaluation of this program, either institution may withdraw from the Cooperative Program without penalty by notifying the other institution in writing. The date of withdrawal becomes effective after all currently enrolled students have completed the program.

James O'Hanlon

Dean of Teacher's College
or Designee for the
University of Nebraska-Lincoln

Date: 11-7-91

Karen H. Wells

Vice President for
Educational Services
Metropolitan Community College

Date: 11/12/91

Industrial Technology Education (ITEAA)
ASSOCIATE IN APPLIES SCIENCE DEGREE
Elkhorn Valley Campus - Fort Omaha Campus - South Omaha Campus

This program offers the student an opportunity to obtain an associate in applied science degree that is transferable as the first two years of the baccalaureate degree in Industrial Education fromo the University of Nebraska-Lincoln. It provides a portion of the basic general education and vocational courses required of all Industrial Education students at the University of Nebraska-Lincoln.

PROGRAM REQUIREMENTS

			Quarter Hours
General Education Requirements			51.5
ART	100	Art History	4.5
BIO	101	Intro to Biology	6.0
ENG	101	English Comp I	4.5
ENG	102	English Comp II	4.5
HIS	101	US History I	4.5
MAT	132	College Algebra	5.0
PSY	101	Gen Psychology	4.5
PSY	121	Hum Growth & Dev.	4.5
PSY	123	Cog Development	4.5
SOC	101	Intro to Sociology	4.5
SPE	110	Public Speaking	4.5
Required Courses in Industrial Technology Education			47.5
ACT	109	Beg AutoCAD	4.5
ACT	119	Int AutoCAD	4.5
CST	101	Intro Construction	3.5
CST	109	Print Reading	3.0
CST	131	Basic Cab Const	4.5
ELT	101	DC Theory I	4.0
ELT	102	DC Theory II	4.0
ELT	205	Digital Techniques I	4.0
IDM	205	Sm Engine Repair	3.5
PMT	101	Intro Machine Tech	6.0
WEL	103	Ind Cutting Process	3.0
WEL	111	Arc Welding	3.0
Total Required Hours			99

Below is a suggested guide for the student planning to transfer this associate degree as the first two years of the baccalaureate degree in Industrial Education at the University of Nebraska-Lincoln.

FIRST YEAR

FIRST QUARTER			*SECOND QUARTER*			*THIRD QUARTER*		
ART	100	4.5	CST	109	3.0	CST	131	4.5
ENG	101	4.5	ENG	102	4.5	HIS	101	4.5
CST	101	3.5	IDM	205	3.5	ELT	101	4.0
MAT	132	5.0	PMT	101	6.0	PSY	101	4.5
		17.5			17.0			17.5

SECOND YEAR

ACT	109	4.5	ACT	119	4.5	WEL	111	3.0
BIO	101	6.0	ELT	102	4.0	PSY	123	4.5
PSY	121	4.5	SOC	101	3.5	SPE	110	4.5
		15.0	WEL	103	3.0	ELT	205	4.0
					16.0			16.0

UNL Industrial Technology Education
Planning Guide For
Metropolitan Community College
Associate of Applied Science Degree

GENERAL EDUCATION REQUIREMENTS:

Metro		UNL	
ART 100 Art History	4.5	AHIS 101 Intro to Art His	3
BIO 101 Intro to Biology	6.0	BIOS 101 Gen Biology	4
ENG 101 English Comp I	4.5	ENG 150 Composition I	3
ENG 102 English Comp II	4.5	ENG 151 Composition II	3
HIS 101 US. History I	4.5	HIS 201 Am History	3
MAT 132 College Algebra	5.0	MATH 101 Col Algebra	3
PSY 101 Gen Psychology	4.5	PSYC 181 Into to Psych	3
PSY 121 Hum Growth & Dev	4.5	FACS 160 Human Dev	3
PSY 123 Cog Development	4.5	EDPS 261 Fnd Ed Psych	3
SOC 101 Intro to Sociology	4.5	SOC 101 Intro Sociology	3
SPE 110 Public Speaking	4.5	COMM 209 Pub Spkg	3
	51.5 Qtr.Hrs.		**34 Sem. Hrs.**

B. ENDORSEMENT REQUIREMENTS

Industrial Technology Education Courses

ACT 109 Beg AutoCAD	4.5	VAED 101 Drafting	3
ACT 119 Int AutoCAD	4.5	VAED 103 CAD Drafting	3
CST 101 Into Construction	3.5	VAED 104 Wood Tech	2
CST 109 Print Reading	3.0	VAED 102 Arch Drafting	2
CST 131 Basic Cab Const	4.5	VAED 243 Prod Wood	3
ELT 101 DC Theory I	4.0	VAED 201 Electricity/El	2.6
ELT 102 DC Theory II	4.0	VAED 201 Electricity/El	2.7
ELT 205 Digital Techniques I	4.0	VAED 201 Electricity/El	2.7
IDM 205 Sm Engine Repair	3.0	VAED 203 Auto Tech	2
PMT 101 Intro Machine Tech	6.0	VAED 204 Machine Tech	4
WEL 103 Ind Cutting Process	3.0	VAED 202 Welding Tech	2
WEL 111 Arc Welding	3.0	VAED 202 Welding Tech	2
	47 Qtr.Hrs.		31 Sem.Hrs.

TOTAL TRANSFER SEMESTER HOURS = 65

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